

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 Claim 1 (original): A method of joining plastics comprising:

2 a) creating a first surface diffusion zone containing
3 therein a first polymerizable material, wherein said first
4 surface diffusion zone is adjacent to a first surface of a
5 first workpiece; and,

6 b) creating a second surface diffusion zone
7 containing therein a second polymerizable material, wherein
8 said second surface diffusion zone is adjacent to a second
9 surface of a second workpiece, and wherein said first
10 polymerizable material and said second polymerizable
11 material are capable of bonding with each other; and,

12 c) bringing said first surface and said second
13 surface into intimate contact at a bonding surface; and,

14 d) causing said first polymerizable material and said
15 second polymerizable material to react and join across said
16 bonding surface.

1 Claim 2 (original): A method of joining plastics as in
2 claim 1 wherein at least one of said first surface or said
3 second surface has at least one microfeature therein.

1 Claim 3 (original): A method of joining plastics as in
2 claim 1 wherein at least one of said first workpiece or said
3 second workpiece is a high-performance engineered plastic.

1 Claim 4 (original): A method of joining plastics as in
2 claim 3 wherein at least one of said first workpiece or said
3 second workpiece is selected from the group consisting of
4 polyetherimides, polyphenylenes, and polyether-ether-
5 ketones.

1 Claim 5 (original): A method of joining plastics as in
2 claim 4 wherein said first workpiece and said second
3 workpiece are polyphenylenes and said first polymerizable
4 material and second polymerizable material are mixtures of
5 styrene and divinylbenzene.

1 Claim 6 (original): A method of joining plastics as in
2 claim 5 wherein both of said mixtures have a ratio of
3 approximately 9:1 by volume of styrene to divinylbenzene.

1 Claim 7 (original): A method of joining plastics comprising:
2 a) creating a first surface diffusion zone containing
3 therein a polymerizable material, wherein said first surface
4 diffusion zone is adjacent to a first joining surface of a
5 first workpiece; and,
6 b) providing a second workpiece having a second
7 joining surface; and,
8 c) bringing said first joining surface and said
9 second joining surface into intimate contact at a bonding
10 surface; and,
11 d) causing said polymerizable material to react and
12 join across said bonding surface.

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1 Claim 8 (original): A method of joining plastics as in
2 claim 7 wherein at least one of said first joining surface
3 or said second joining surface has at least one microfeature
4 therein.

1 Claim 9 (original): A method of joining plastics as in
2 claim 7 wherein at least one of said first workpiece or said
3 second workpiece is a high-performance engineered plastic.

1 Claim 10 (original): A method of joining plastics as in
2 claim 9 wherein at least one of said first workpiece or said
3 second workpiece is selected from the group consisting of
4 polyetherimides, polyphenylenes, and
5 polyether-ether-ketones.

1 Claim 11 (original): A method of joining plastics as in
2 claim 10 wherein said first workpiece is a polyphenylene,
3 said second workpiece is a polyetherimide and said
4 polymerizable material is styrene.

Claims 12-21 (canceled).